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April 23, 1974

Dr. E. E. Grishayev Head, Department of Finance and Capital Investment State Committee of the Council of Ministers Moscow, U.S.S.R.

Dear Dr. Grishayev:

In accordance with our agreement reached at the November, 1973, meeting of the US-USSR Joint Group of Experts in the Field of Science Policy, I am enclosing for your consideration material called for in the Study Outline established for the exchange of information on the financing of research and development.

The material is organized into two sections. The first contains table shells showing the types of USSR research and development data requested by US analysts of Soviet research and development activities. The second contains table shells representing the types of research and development financial data which can be made available to Soviet experts on research and development activities in the US and related material on US collection methodologies, definitions and concepts.

Generally, the research and development expenditure data called for in both sections pertain to:

type of work (fundamental and applied research, development, construction of research and development plant)

type of research and development performer

field of science

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April 23, 1974

branches of the national economy (industry, agriculture, etc.)

cost elements (wages, materials)

size of performing institution

geographic location

sources of financing (budget, enterprise funds) and mode of financing contracts, direct funding.

The terminology used to describe the characteristics of Soviet research and development financial data reflect US perceptions of the appropriate terms based on available Soviet literature. Our perceptions may be faulty, and it is possible that better terms can be arrived at in further discussions.

Section I contains 24 table shells for which Soviet data are requested. The first 21 of these tables refer to science outlays (on research and development and/or construction) as defined in Soviet statistical practice. Since Soviet accounting differs somewhat from ours, and since an ultimate goal of our joint effort is to develop more comparable measures of US and USSR research and development activity, we have included three additional tables (Tables 22-24) which deal with expenditures not included in Soviet data on science outlays but are included to a considerable extent in US data on research and development in industrial enterprises.

Throughout Tables 1-21, terminology is intended to be uniform. Thus, in Table 1 "research and development" means science outlays excluding construction, and this is the meaning in which research and development is used throughout the first 16 table shells. Similarly, in Table 1, "construction" means capital investment for science only, and this is its meaning in Tables 4 and 18-20. Where a term has a more restricted meaning in one table than in another, this is specified: for example, in the tables that involve distributions of outlays by type of performer, "production enterprises" conceptually includes enterprises in all branches of material production; in Tables 17 and 22-24, it seemed appropriate to restrict the term to industrial enterprises only.

Please note that Table 21 asks for a distribution of research and development outlays by function or purpose but that no functional categories are provided. This omission arises from the difficulty in framing such a table in terms that do not simply duplicate either the functional categories used by the US side, which may not be suitable for classifying Soviet research and development data, or terms used in the distribution asked for by branch of the economy and branch of industry. We will welcome indications of possible functional categories Approved For Release 2000/08/23: CIA-RDP79-00798A000500090003-1

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Dr. E. E. Grishayev

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for which the USSR side could provide data. The extent to which the distributions by branch of the economy and branch of industry approximate functional groupings depends of course on how the data are derived. We anticipate that many questions of this sort will arise throughout the study which will be clarified by providing explanatory notes with tabular material and by exchange of information on statistical concepts, definitions and methodology of collecting and aggregating data, as provided for in the Study Outline.

The years specified on the tables represent our notion of what data are most likely to be available in finished form in Soviet statistics. If, however, the Soviet side is able to provide data for nonspecified years, such data would be welcome.

Section II contains 38 table shells indicating the data the US side can make available to Soviet analysts on US financing of research and development. The tables provide for data aggregated to the national level as well as selected statistics for each of the four major sectors of the economy. We have included in Section II information on the definitions, concepts and survey methodology (including survey forms and instructions) used in collecting US data on research and development.

I look forward to receiving from you in the near future a list of the types of data Soviet analysts would be interested in receiving from the US side and the types of data on research and development financing available from the Soviet side.

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WS:JDV Enclosures

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U.S. - U.S.S.R. PROGRAM OF COOPERATION
IN THE FIELD OF SCIENCE POLICY

Proposed R&D Expenditure Data to be Included in the Exchange of Information Between the U.S. and U.S.S.R.

Prepared by the U.S. Members of the Working Subgroup on the Financing of Research and Development

April 1974

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	•					
1968 1969 1970 1971 1972 1973	1962 1963 1964 1965 1966	1958 1959 1960 1961	1955 1956 1957	1952	1950	ופמו
·				•		
·			•			
		-				10701
•				,		
•			•			R&D
					-	
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						Cons
	٠.	•				Construction
						ion

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Table 1 USSR: Total Science Outlays (R&D and Construction), 1950-1973

[Million rubles]

[-]

USSR: Table 2
Total R&D Outlays by Type of Work, by selected Years, 1950-1973

[Million rubles]

Approved For Rel 2000/08/23 : CIA-RDP79-00798A00 0090003-1				
	1950 1966 1967 1968 1969 1970 1971 1972	Year		
•		Total		
•		Fundamental research		
		Applied research		
		Develop- ment		

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Total R&D Table 3
USSR: Total R&D Outlays by Type of Performer, 1950-1973 Organizations Of which: Academies [Million rubles] Higher Educational Institutions Production Enterprises

> Other Organizations

Year

Total

. Signi Asam and Milester when

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Table 4
USSR: Total Construction Outlays by Type of Performer, 1950-1973 [Million rubles]

!			'	. —
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Total	
•			Total	R&D Or
	-	·	Of which: Academies	Organizations
•		•	Educational Institutions	Higher
			Production Enterprises	
			Other Organizations	•

Table: 5 USSR: Total R&D Outlays by Sources of Funding, 1950-1973

Approved F	or 647 727 73	Year	
		Total	
•	^	Total	
		Science budget	Direct
		Other budget	ect Funding
•		Enterprise funds	
		Total	
		Science budget	Con
	•	Other budget	Contracts
Approved F	or Release 2000/08/23 : CIA-RDP79-00798A000500090003-1	Enterprise funds	

Table 6 USSR: Total R&D Outlays by Branch of the Economy, 1950-1973

For example, outlays of the general academies of sci	Agriculture Borestry Fransportation mmunications Fonstruction Frade, supply, procurement Pousing and Municipal services Bealth Peducation, culture, art Ecology Bydrometeorology Administration and finance Other functional branches Other outlays not attributable to functional branches	Total all Branches	Branch of Economy
sciences, higher			1950
r educational			1951
			1952
institutions.			1973
Approved For Release 2000/	08/23 · CIA-RDP79-00798A000500090003-1		

Table 7 USSR: Total R&D Outlays by Branch of the Economy and Type of Performer, 1965-1973 $^{\underline{a}\prime}$ [Million rubles]

Approved F	or Remove 2000/88837 @ RUD 78	BAG	50 ₩090003-1
These data are requested for each year, 1965 through 1973.	Adustry Adustry Advisoriture Bransportation Construction I rade, supply, procurement Education, culture, art Education, culture, art Adving and municipal services Malucation, culture art Cology Widrometeorology Widrometeorology The coult are and finance The functional branches To functional branches	al all Branches	Beanch of Economy
ch ye		-	Total
ear, 19			tal
65		-	
through			R&D Or
1973.			Organizations Of which: Academies
, ~			
•			Higher Educational Institutions
			Production Enterprises
Approved Fo	or Release 2000/08/23 : CIA-RDP79-00798	34000	Other Organization

Table 8 USSR: Total R&D Outlays by Branch of the Economy and Source of Funding, $1965-1973^{\underline{a}/}$ [Million rubles]

de data are requested for each year, 1965 through 1973 de	Industry Agesculture Forestry Agesculture Forestry Trapsportation Communications Communications Communications Trade, supply, procurement Health Health Education, culture, art Geology Administration and finance Other functional branches Other outlays not attributable functional branches	Toto all Branches		
each year	•		Total	
, 1965 th			Total	
rough 1973			Science budget	Dire
		1	Other budget	Direct Funding
			Ent. funds	7.
			Total	
			Science budget	Cont
			Other budget	Contracts
Approved For Re	lease 2000/08/23 : CIA-RDP79-00798A00050	09000	Ent. funds 3	

Table 9 USSR: Total Industrial R&D Outlays By Branch of Industry, 1950-1973

[Million rubles]

	.			5
Branch of Industry	1950	1951	1952	1973
Totel all Branches				
El Pric power		•	`	
Sel and gas				
Wal Other fuels Fextous metals				
No语errous metals Chemicals and petrochemicals	•			
Asemicals Petrochemicals Machinebuilding and metalworking Beavy, power, and transport machinery Sectrical equipment				
Lumber, wood products, paper Contruction materials Glob, porcelain Light industry Food industry Other industry				
pprove			, •	
Ar				•

...

Table 10 USSR: Total Industrial R&D Outlays by Branch of Industry and Type of Performer, 1965-1973-/ [Million rubles]

Other industry	Light industry	⊆••	Wital working Wieavy, power, and trans- O port mach. 2 Electrical equipment	Chemicals and Petrochemicals A Chemicals O Petrochemicals Machinebuilding and	0079Coal 000ther fuels Frous metals	tric power ABOil and gas	G Tæal all Branches	Ranch of Industry
		· .				*		Total
			•	-				Total
,			. •				3	Of which: academies
				•				Higher Educational Institutions
			_					Production Enterprises
								Other Organizations

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USSR: Total Industrial R&D Outlays by Branch of Industry and Source of Funding, $1965-73^{\underline{a}/}$

ৰূ/ These data are requested for each year,	And ther fuels Nonferrous metals Nonferrous metals Chemicals and petrochemicals Achemicals Petrochemicals Petro	Fuels * Fuels * Fool	Togal all Branches	Brænch of Industry		
				Total		
1965 throug				Total		[Millic
through 1973				Science budget	Direct	[Million rubles]
				Other budget	funding	
				Ent. funds	: :	
		·		Total	-	
//		·		Science • budget	Con	
		7		Other budget	Contracts	
Ap	proved For Release 2000/08/23 : CIA-RDP79-00	798A000500	90003	fur fur		

Table 12 Jotal R&D Outlays by Type of Performer, Type of Work, and Source of Funding, $1965-1973^{a/2}$ [Million rubles]

			Direct funding	unding			Contracts	cts	
Dosformon & Type of Work	Total	Total	Science budget	Other budget	Ent. funds	Total	Science budget	Other budget	Ent. funds
Total all Performers									
R&D Organizations, Total Fundamental research			3.					· ••	
Applied research Development		•						•	
Of which: Academies . Fundamental			•						
Applied Development		-						•	
Higher Educational Institutions Fundamental			•						
Development									
Production Enterprises Fundamental Annlied									
Development	•				.:				
Fundamental Applied Development				•				,	
יייייין ארפא אפאריייין איייין אייין איין אייין אייין אייין אייין אייין איין איי	mean daca	1965 through 1973.	ah 1973.			• .			

Table 13
USSR: R&D Outlays by Type of Expenditure (R&D Organizations Only),
Selected Years, 1950-1973

Type of Expenditure	1950	1960	1965	1973
Tekal all Expenditure				•
₩ 6 Des				
cientists and engineers ther employees				
PArchase of Equipment Scientific equipment				
Materials, Power, etc.				
Power there	-			
Other Expenditures Social insurance charges	•			
&Capital repair				
000				

Table 14 SR: Fundamental and Applied Research Outlays by Field of Science, Selected Years, 1950-1973<u>a</u>/

					a/ For years in which the little
				•	Architecture Other Sciences
			1		Medicine and pharmacy Art
; •					Psychology
		•			Law Pedagogical sciences
•			•		Other
		~			Oceanography • • • • • • • • • • • • • • • • • • •
		•			Geography
		•			Cinguistics Other
•		٠.	· .		Philology
					0001010gy
					Philosophy
					Economics
				•	Agricultural and veterinary sciences History
•					etc.
·		•	•		Technical sciences Machinehuilding
. •	•				Geology and mineralogy
	-			,	Chemistry
	•		,	•	Mathematics
			1		Physics and mathematics Physics
					, ,
1973	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1900	1300	1,000	Total all Fiolds
		1065	1060	1950	Fleid of Science

				-
Geographic Region	1950	1960	1965	1973
Total, all Regions				
RS#SR (If possible, please subdivide by region)		3 .		
Beorussian SSR		•		
Lagvian SSR				
Esconian SSR		,		
Geargian SSR	•			
Azerbaidzhan SSR Arelenian SSR				
Uzek SSR Kanakh SSR		•		
King iz SSR				
Tagizhik SSR Timbuman SSR				
20				

	USSR:	
	R&D (
	Outlays of R&D	
	0f	
	R&D	
	0	Table 16
	ঠ	
	by Size	
** **	of Organiz	

١٩	2000/08/23 :	-A\$D	RDP79-00798Æ0	क्रेंब	0003	1
	*1,500 or less 1,501 - 3,000 3,000 -10,000 10,000 or more	Size Classes Based on Outlays (1,000 rubles) For example:	Size Classes Based on Employment (units) For example: 500 or less 501 - 1,000 1,001 - 3,000 3,000 or more	tal. all R&D Organizations	ଞ୍ere of organization	
			•	•	1965	
					1966	
					1973	

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By Size Classes Based on Gross Output (1,000 rubles)
For example:
C 10,000 or less 10,000 or less 10,001 - 50,000 50,001 -100,000 100,001 or more

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example:

1,000 or less 1,001 - 3,000 3,001 -10,000 10,001 or more

Siz&of Enterprise

Tot紀, all Industrial Enveryment (units) 教室 Classes Based on Employment (units)

Table 17 USSR: R&D Outlays of Production Enterprises (Industrial Enterprises Only) By Size of Enterprise, 1965-1973

[Million rubles]

1965

1966

1973

Арр	roved For Rel 2000/08/23 : CIA-RDP79-00798A00 009000 1950 1950 1955 1955 1956 1956 1956 1966 1967 1968 1969 1970 1973	3-1 Year	
		Total	Table 18 USSR: Total Construction Outlays by Years, 199 [Million ru
•		Science budget	Table 18 n Outlays by Sources Years, 1950-1973 [Million rubles]
•		Other Budget	s of Funding, Selected
		• Enterprise funds	

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Table 19
USSR: Total Construction Outlays by Type of Expenditure,
Selected Years, 1950-1973

proved	For Rel e 2000/08/23 : CIA-RDP79-00798A0(00090003-1	
	1950 1951 1952 1953 1954 1955 1956 1960 1961 1963 1966 1966 1966 1967 1968 1969 1970 1972	Year
•		Total
·		<u>ن</u>
-		insta
; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;		installation
, •		
		Equipment
		ent
, , , , , , , , , , , , , , , , , , ,	•	expenditures
•		itures
	·	

Table 20 USSR: Total Construction Outlays by Branch of the Economy, Selected Years, 1950-1973

Brandh of	eçonomy	1950	1955	1960	1965	1973
Tota 90 0	all Branches					
				`		
Industry	•		•			
Fore s try						
Trangport	ation					
Construct	tions		· .			
Trade supply,	supply, procurement	- 				
Heal g n Education	ealgn ducation, culture, art	· · · ·				***************************************
Hydr e jete	orology				-	
othe 2005 fun	Othe of functional branches					
ti.	rtional branches					
or R						
oved F		¥ .	•			
Appr	•	•	•	•		_/_

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 $\frac{a}{The}$ Soviet side is requested to provide suitable functional categories. Year 1966 1967 1968 1969 1970 1971 1971 Total R&D Outlays Function^a

e 2000/08/23 : CIA-RDP79-00798A00

Table 21
USSR: Total R&D Outlays by Function, 1966-1973
[Million rubles]

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Table 22
USSR: Total Preproduction or "Innovation" Outlays (Not in Science Outlays)
At Industrial Production Enterprises, Selected Years, 1950-1973

	(*										
	7950 1960	1960 1965 1966	1967 1968	1969	1971 1972 1973		,		•		
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outlays <u>D</u> /									٠		
		•									

Table 23

)003 1 Go級ank loans
Expenditures of future periods
Other sources Source of funding for mastering new technology for development of production all Sources Total Preproduction or "Innovation" Outlays (Not in Science Outlays)
At Industrial Production Enterprises by Source of Funding,
Selected years, 1950-1973 [Million rubles] 1950 1960 1965 1973

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Ember, wood products, paper

Food industry 032 industry 2000 ospher industry CPostruction materials GLass, procelain

9**9**00 Bmanch of industry Fæls
Færous metals
Pænferrous metals
Dæmicals and petrochemicals Achinebuilding and metalworking ctric power all Branches 1950 1960

Total Preproduction or "innovation" Outlays (Not in Science Outlays) at Industrial Production Enterprises by Branch of Industry, Selected Years, 1950-1973 Table 24

[Million rubles]

1965

1973 Approved For Release 2000/08/23: CIA-RDP79-00798A000500090003-1 Approved For Rele 2000/08/23: CIA-RDP79-00798A00 0090003-1
Section II. U.S. R&D EXPENDITURE SURVEY CONCEPTS, DEFINITIONS AND METHODOLOGY

Performing Sector. U.S. Data on R&D financing are collected and compiled for each of the four major sectors of the national economy. The Federal Sector is made up of the departments and agencies of the Federal Government. The industry sector consists of both manufacturing and non-manufacturing companies. Manufacturing companies are classified in major industry groupings and non-manufacturing companies, which include organizations such as those in selected service industries, are treated as a unit. FFRDC's administered by industrial firms are also included. The universities and colleges sector is composed of all institutions of higher education, both public and private. The universities and colleges sector is comprised of the following:

colleges of liberal arts
schools of arts and sciences
professional schools, such as engineering and
medical schools (including affiliated hospitals)
associated research institutions and similar
organizations which represent an integral part
of a university or college
agricultural experiment stations and associated
schools of agriculture

Institutions in the nonprofit sector fall into two general groups:

1) organizations that are primarily granting in nature, namely private philanthropic foundations and voluntary health agencies and 2) public and private organizations that are involved in performing research and development including separately incorporated nonprofit research institutes, professional societies, academies of science, museums, zoological gardens, botanical gardens, arboretums, nonprofit hospitals.

Finally, within each of the private sectors are a number of Federally Funded Research and Development Centers administered by private organizations. These centers are R&D performing organizations exclusively or substantially financed by the Federal Government, that were established to meet either a particular R&D objective or to provide major facilities at universities for research and associated training purposes.

<u>R&D Activity</u>. Research and development consist of basic and applied research in the sciences (including medical sciences) and in engineering and activities in development, as defined below.

Research, which is made up of basic and applied, is systematic, intensive study directed toward fuller scientific knowledge of the subject studied. Research in the natural sciences - life, physical and engineering - as well as the social and psychological sciences is covered in the Federal, universities and other nonprofit sectors. Industry coverage is limited at present to the natural sciences.

Basic research for three of the sectors, the Federal Government, universities and colleges, and other nonprofit institutions, is defined to stress the emphasis on activity in which the primary aim of the investigator is a fuller knowledge or understanding of the subject under To take account of an industry's commercial goals, the definition of basic research for this sector is modified to cover original investigations for the advancement of scientific knowledge which do not have specific commercial objectives although they may be in fields of present and potential interest to the reporting company.

Applied research as defined for surveys of universities and colleges is research directed toward the practical application of knowledge. take account of the unique characteristics of industrial organizations, the industry survey defines applied research as research directed toward the discovery of new scientific knowledge which has specific commercial objectives with respect to either products or processes. By this definition, applied research in industry differs from basic research chiefly in terms of objectives of the reporting company.

Development may be summarized as the systematic use of scientific knowledge directed toward the production of useful materials, devices, systems or methods including design and development of prototypes and processes. Development includes technical activities of a non-routine nature concerned with translating research findings or other scientific knowledge into products or processes. Development does not include routing technical services to customers.

Current operating costs for research and development refer to both direct and indirect costs of research and development including depreciation, insofar as this information is available to respondents. Included under this category are wages and salaries, materials and supplies consumed, property and other taxes, maintenance and repairs, depreciation and an appropriate share of overhead. Also included are the costs of planning and administering R&D programs.

Capital R&D expenditures are excluded from current operating costs by definition and this practice is followed in both the industry and "other nonprofit" sectors. Under the accounting practices of some Federal agencies, particularly the Department of Defense, detailed data on Federal R&D funds, which are available only in terms of obligations rather than expenditures, do not include an allowance for depreciation but do include some obligations for capital items.

Fields of science used to classify R&D expenditure data reported by the various sectors are divided into broad field categories, most of them consisting of a number of detailed fields. The broad fields are life sciences, psychology, physical sciences, environmental sciences, mathematics, engineering, social sciences and "other sciences not elsewhere classified." Specific taxonomies for fields of science are further described in the sections that follow on individual sector surveys. These taxonomies differ only in the level of detail provided.

National R&D Expenditures

National statistics on R&D expenditures are compiled from survey data collected independently from all four sectors of the economy - Federal Government, industry, universities and colleges and other nonprofit organizations - based on the amounts each sector reports as spent for intramural research and development and the sources of such funds. While surveys have been conducted in the Federal Government and industry sectors every year since 1953, the same frequency has not been maintained for universities and colleges and other nonprofit institutions. National data for years in which data were not available for the latter two sectors are based on survey data on the performance of total research and development from the Federal and industry sectors and on estimates for the university and other nonprofit sectors.

. Federal R&D Funding

R&D funding. Data are collected from Federal agencies in terms of expenditures and obligations. Expenditures represent the amounts for checks issued and cash payments made during a given period regardless of when the funds were appropriated. Obligations represent the amounts for orders placed, contracts awarded, services received, and similar transactions during a given period, regardless of when the funds are appropriated and when future payment of money is required. For those agencies operating on a cost type budget accrued expenditures and costs are reported instead of obligations. Accrued expenditures represent all costs accrued during the reporting period e cept those subject to reimbursement from other agencies. The information on expenditures represent net cash payments for research and development and R&D plant exclusive of any receipts of the agencies for those purposes.

Obligations and expenditures for work performed in foreign countries include funds directly available to Federal agencies and special foreign currencies separately appropriated.

Reporting Period. The reporting period for Federal R&D funding survey is the fiscal year which is the government accounting period beginning July 1 of one year and ending June 30 of the following calendar year. Thus, fiscal year 1973 began on July 1, 1972 and ended June 1973.

Funds for research and development are reported on a three-year basis comparable with data shown in the Budget of the United States Government. The data include amounts actually expended or obligated in the last completed year, amounts budgeted for the current year and amounts representing the planned budget for the next year. Data for the latter two periods are considered estimates since they do not represent completed transactions and are subject to further appropriation, apportionment or allocation decisions.

Federal Agency. An agency is an organization of the Federal Government whose principal executive officer reports to the President. The two exceptions are the Library of Congress and the Postal Service which are also included in the survey. The term "subdivision" refers to any major organizational unit of a reporting agency such as a bureau, division, office or service.

Performers. Performers are either intramural organizations accomplishing operational functions or extramural organizations or persons receiving support or providing services as a result of a contract or grant.

Intramural performers are the agencies of the Federal Government. Their work is carried on directly by their own personnel. Extramural performers are all organizations outside the Federal complex that perform with Federal funds under contract or grant. Only costs of actual extramural performers are reported. The cost of extramurally procurred "off the shelf" supplies and equipment required to support intramural research and development are reported as part of the cost of intramural performance.

In addition to data on domestic R&D activities that are reported by the other three sectors of the economy, Federal R&D funding data include foreign performers which are confined to foreign citizens, organizations or governments as well as international organizations, such as NATO, UNESCO and WHO, performing R&D abroad financed by the Federal Government. Excluded are payments to U.S. agencies, organizations or citizens performing research and development abroad for the Federal Government.

A final category of performers included in data on Federal Funds for R&D is described as all other miscellaneous performers not covered in the foregoing categories such as state and local governments, and private individuals.

R&D Plant. Federal R&D funding data include obligations and expenditures for R&D plant, that is, R&D facilities and fixed equipment such as reactors, wind tunnels and radio telescopes. These data include funds for the acquisition or construction of major repairs to or alterations in structures, works, equipment, facilities, or land for use in R&D activities at Federal or non-Federal installations. Excluded from the R&D plant category are expendable equipment and office furniture and equipment. Obligations for foreign R&D plant are limited to Federal funds for facilities located abroad and used in support of foreign research and development.

Industrial R&D Expenditures

Operating expenditures incurred by industrial organizations in the conduct of research and development in their own laboratories or other company owned or operated facilities include wages and salaries, materials and supplies consumed, property and other taxes, maintenance and repairs, depreciation and an appropriate share of overhead that excludes capital expenditures.

Federally financed research and development includes receipts for work done by the company on R&D contracts or subcontracts and R&D portions of procurement contracts and subcontracts.

Company financed research and development includes the cost of companysponsored research and development performed within the company. It does not include company-financed research and development contracted to outside organizations such as research institutes, universities and colleges or other nonprofit organizations.

Geographic data on an industrial research and development expenditures include only those operations located in the 50 States and the District of Columbia.

Industries and industry groups shown separately in statistical tables are classified according to the Standard Industrial Classification (SIC) Manual as follows:

Manufacturing industries:

Food and kindred products (20) Textiles and apparel (22,23) Lumber, wood products, and furniture (24,25)

Paper and allied products (26)

Chemical and allied products (28) Industrial chemicals (281-82) Drugs and medicines (283) Other chemicals (284-89)

Petroleum refining and extraction $(29,13)^{1/2}$ Rubber products (30) Stone, clay, and glass products (32) Primary metals (33)

Ferrous metals and products (331-32,3391,3399) Nonferrous metals and products (333-36,3392)

Fabricated metal products (34) Machinery (35) . Electrical equipment and communication $(36.48)^{1/2}$ Radio and TV receiving equipment (365) Communication equipment and electronic . components (366-67, 48) Other electrical equipment (361-64 and 369)

Motor vehicles and other transportation equipment **8(371,7** 373-75, 379) Aircraft and missiles (372, 19)

Professional and scientific instruments (38) Scientific and mechanical measuring instruments (381-82)

Optical, surgical, photographic, and other instruments (383-87) Other manufacturing industries-tobacco manufacturers (21), printing and publishing (27), leather products (31), and miscellaneous manufacturing industries (39)

Nonmanufacturing industries:

agriculture, forestry, and fisheries (07-09); mining (10-12,14); contract construction (15-17); transportation and other public utilities (41-47,49); wholesale and retail trade (50-59); finance, insurance, and real estate (60-67); and selected service industries (739,807,891).

^{· 1/}Crude petroleum extraction (13) is grouped with petroleum refining (29), and communication (48) is grouped with electrical equipment (36), in the manufacturing group of industries.

A reporting unit for industry R&D expenditure data is the company or corporate family which includes all establishments under common ownership or control. Similarly each company is classified in a single size category on the basis of its total employment.

The industry R&D survey sample encompasses all manufacturing industries and those non-manufacturing industries known on the basis of earlier more detailed samples to conduct or to finance research and development. The sampling unit for the survey is the company, defined as a business organization consisting of one or more establishments under common ownership or control. All manufacturing companies with 1,000 or more employees in 1967, as determined from the 1967 Economic Censuses Enterprise Statistics multi-unit file, are included in the samples with certainty. Manufacturing companies with fewer than 1,000 employees are sampled at rates depending upon their industry and employment size as determined in the 1967 Economic Censuses Enterprise Statistics multi-unit file and the 1967 Census of Manufacturing universe file. For non-manufacturing industries, the sample was based on the 1966 records of the Social Security Administration.

Approximately 8,000 manufacturing and non-manufacturing companies were represented in the 1971 sample. More than 1,800 of the companies included were "certainty" companies which account for almost 95 percent of the total R&D performance funds. The probabilities of being selected in the industry survey range from one change in 200 (.005) to certainty (1.000).

Universities and Colleges R&D Expenditures

Current expenditures for separately budgeted R&D include direct and indirect costs for research and development performed under a grant or contract from the Federal Government, State Government, industrial organizations, etc., and R&D paid for from institutions own funds which were designated or budgeted by the institution for such use.

Non-separately budgeted R&D Expenditures include amounts reported in addition to separately budgeted R&D expenditures representing departmental research and other R&D activities for which universities and colleges do not maintain separate records. These amounts are estimated by institutions and include funds allocated to departmental research by the various academic departments as well as so e indirect costs associated with R&D performance.

The coverage of the survey of universities and colleges survey includes some 800 institutions of higher education in the United States and U.S. possessions which are known to have R&D programs in the sciences and engineering. These institutions are sent mail questionnaires after which intensive follow-up procedures are employed with the larger universities resulting in obtaining R&D expenditures data comprising about 95 percent of all R&D expenditures at universities and colleges. Totals reported for this sector include estimates for nonresponse made from information compiled from secondary sources.

Nonprofit R&D Expenditures

Current R&D Expenditures include direct and indirect costs for R&D performed with funds provided by other organizations or from institutions' own funds.

The coverage of the survey of independent nonprofit research organizations includes some 500 to 600 facilities which are surveyed by mail. Follow-up for non-response is conducted by mail or, in the case of the largest intramural R&D performers, by telephone. The criteria for including a research institution in this sector is based primarily on its independent and tax exempt status with the U.S. Internal Revenue Service. There is no single directory or source document from which a complete mailing list of nonprofit organizations which perform research and development is available. Organization's are selected for surveying, therefore, from mailing lists used in previous surveys and a number of specialized directories. The number of such organizations with R&D expenditures totalling \$100,000 or more excluded from the survey is believing to be extremely small.

Functional Distribution of Federal R&D Obligations

Scope and coverage. Data on Federal R&D obligations by function, (or R&D objective) presents a distribution of Federal funding by 16 individual functions representing the major purposes for which U.S. R&D efforts are committed. This distribution is made by National Science Foundation staff based on data compiled for the Budget of the United States Government and on agency reports to the National Science Foundation on R&D obligations.

The data on Federal outlays by function and subfunction are taken directly from the budget document. Interest is excluded as a function as is general revenue sharing the annual totals used for computation of shared relationships represents total outlays minus interest general revenue sharing and special allowances plus undistributed adjustments. No information is available to permit distribution of offsetting receipts among the various subfunctions.

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Classifications and definitions. The definitions of functions and subfunctions are implicit in their titles and content. Each function under the budget arrangement embraces the agency's components whose primary mission is related to that function. R&D programs of each agency's subdivision or program are classified into a single function since multiple functions would cause programs to overlap and add to more than 100 percent of total R&D expenditures.

Table 1

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U.S.: Transfers of funds expended annually for performance of research and development by sector, distributed by source, 1953-73 Total R&D Total funds used Foderal Government Federal Govern-ment Source Total funds used Federal Govern-ment Industry Sources Industry Total funds used [Millions of dollars] Federal Govern-ment Universities and colleges Industry and colleges Sources Other nonprofit institu-tions Associated FFRDC's Total funds used Federal Govern-ment Source Total funds used Other nonprofit institution Federal Govern-ment Sources Industry

U.S.: Transfers of funds expended annually for performance of basic research by sector, distributed by source, 1953-73 [Millions of dollars] Table 2

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	Total basic research	•	
	Total funds used	Government	Federal
	Federal Govern- ment	Source	eral
	Total funds used		
	Federal Govern- ment	Sources	1
	industry	es	
	Total funds used		
	Federal Government		Univer
	Industry	Source	Universities and colle
	Univer sities and colleges		olleges
	tions		
	Total funds used		Asso FFR
	Federal Govern- ment	Source	Associated FFRDC's
.•	Total funds used		õ
	Federal Govern- ment		her nonprof
Approved For Release 2000/0	*/23 : CIA-RDP79-00798A000500090003-1	Sources	Other nonprofit institutions
	tion	0	snc

Industry

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Sources

Table 3
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Table 3
Table 3 Total applied research Federal Government Total funds used Federal Govern-ment Source Total funds used Federal Govern-ment Industry Sources industry Total funds used [Millions of dollars] Federal Government Universities and colleges Industry Sources y sities profit and colinstituleges tions Total funds used Associated FFRDC's Federal Govern-ment Source Total funds used Other nonprofit institutions Federal Govern-ment

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Year

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Table 4
Transfers of funds expended annually for performance of development by sector, distributed by source, 1953–73

[Millions of dollars]

U.S.:

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		Total develop-		
		Total funds used	<u>.</u>	Federal Government
	•	Federal Govern- ment	Source	ment
		Total funds used	—I	
		Federal Govern- ment	Sou	Industry
		Industry	Sources	
		Total funds used		
		Federal Govern- ment		Unive
		industry	Sı	Universities and colleges
		Univer- sities and col- leges	Sources	colleges
		Other non- profit institu- tions		
		Total funds used		Asso
		Federal Govern- ment	Source	Associated FFRDC's
•		Total funds used		
		Federal Govern- ment		Other n
	•	Industry	Sources	Other nonprofit institutio
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U.S.: Trends in defense, space, and all other R&D outlays, by source, 1953-73

1973	1953	rear	:
•	: .	Total	De:
	•	Defense related	Defense-space outlays as a percent of total R&D
		Space related	ys as R&D
•		Total	Nond as
		Non- Federal	Nondefense-nonspace outlays as a percent of total R&D
		Federal	e outlays total R&D

Table 6
Table 6
(Millions of dollars)

II-15

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agenciesepartments of Agriculture
agencies epartments of Agricultu of Commerce, of Defense,
epartments of Agricultu of Commerce, of Defense,
of Agricultu of Commerce, of Defense,
-
Department of the Army
Department of Health, Education, and Welfare Department of the Interior Department of Transportation
Other Agencies Atomic Energy Commission

		Estimates	es
Agency	1964	1973	1974
[otal, all agencies	or	•	
Departments .			
Department of Agriculture			. •
Department of the Army			•
Department of Health, Education, and Welfare Department of the Interior Department of Transportation			
Other Agencies Atomic Energy Commission			
National Aeronautics and Space Administration		•	

Atomic Energy Commission	Other Agencies	Department of Health, Education, and Welfare Department of the Interior Department of Transportation	Department of the Army	Departments Department of Agriculture Department of Commerce Department of Defense, Total		Agency	(Millions of doll
		5			i Adam et Principte applytte interpresentationer propositioner propositi	1964	dollars)
and the same of th		- Capaning of Steel Strawn Land of Casts Will address	nagen gang sag saga kang bandang ang mang saga naga sagan naga sagan naga sagan naga sagan naga sagan naga sag			1973	Estimates

National Aeronautics and Space Administration National Science Foundation Veterans Administration	Atomic Energy Commission	Other Agencies	Department of Health, Education, and Welfare Department of the Interior Department of Transportation	Department of the Army Department of the Navy Department of the Air Force Defense Agencies	Department of Agriculture Department of Commerce Department of Defense, Total	Departments	Total, all agencies	Agency	
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A COLOR DE SENSITIVO DE SENSITI	ga a para sa p	Carleste er	galveg varagestrypsorienskalendel Turker varagestrypsorienskalendel	tillen and the state of the sta	na dia mandra di sanggaran di sa	en al l'an l'an an		1973 1974	Estimates

Table 10 Federal obligations for basic research, by selected agency, fiscal years 1964-74 (Millions of dollars)

		ESUMates	
Agency	1964	1973	1974
Department of Agriculture Department of Defense Department of Health, Education,			
Atomic Energy Commission		•	,.
Administration			

II-20

		Estimates
Agency	1964	1973 1974
Total		
Department of Agriculture		: '
Department of Commerce		
Department of Defense	•	
Department of Health, Education,	•	
Department of the Interior		•
Department of Transportation		, in the second of the second
Atomic energy community of Agency		***************************************
National Aeronautics and Space		A
Administration	7	
National Science Foundation	•	
Veterans Administration		,
All others		

II-21

1974

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The second secon		9:5. Federal obligations for basic research, by performer, fiscal years 1964	
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MATTER SPANNE SERVE		basic	•
29 House Share Had Share	(Millions	research,	
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COLUMN SECTION OF THE	(Millions of dollars)	performer,	lable 13
		fiscal	
		years	
	•	1964-74	

Performer	1964		1973
Federal intramural	ESS.	THE PARTY OF THE P	THE STREET ASSESSMENT AND AND ADDRESS OF THE STREET ASSESSMENT ASSE

	Vivilla College College			
			Estimates	ates
Performer		1964	1973	1974
Total				
•	•			-
		•		
irms				
Universities and colleges FFRDC's administered by univer	sities	•		
onprofit inst			<i>y</i> .	
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U.S.: Federal obligations for development, by performer, fiscal years 1964-74 (Millions of dollars) Table 15

		Fec Ind Uni FFR Oth All		Per	1
	· .	deral int dustrial iversitie RDC's adm ner nonpr	Total	former	
•		ramural. firms s and constant inistere ofit insertions	and the state of t		
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	:		M-1000		-
•			And the second s	5 6	A definition of the second
. •				1	
			•	- 1973	Es
				3 1974	Estimates
		I.	53		
			Industrial firms Universities and colleges. FFRDC's administered by universities. Other nonprofit institutions. All other performers	Intramural	former Totaleral intramuraleral firmsversities and colleges

Table 16
U.S. : Federal obligations for basic research, by field of science, fiscal years 1964-74
(Millions of dollars)

	\	\$				
				m	Estimates	
Field of S	Science	1964	1 1 1	1973	ω	1974
Total, all fields	ds					
Life sciences Psychology Physical sciences. Environmental scie Mathematics Engineering Social Sciences Other sciences	inces.					•
			9			

U.S.: Federal obligations for applied research, by field of science, fiscal years 1964-74 (Millions of dollars) Other sciences... Social sciences..... Engineering..... Mathematics..... Psychology..... Environmental sciences.. Physical sciences..... Life sciences..... Total, all fields..... Field of science 1964 -1973 Estimates 1974 Approved For Release 2000/08/23: CIA-RDP79-00798A0005

Table 17

U.S.: Federal obligations for research and and State fiscal years 1963, 1965,	research and development, by geographic 1963, 1965, 1968, 1969, 1970, 1971 and	ographic division 1971 and 1972
	(Millions of dollars)	Williamstrickingere get belande socie a differentiale. In a differentiale man
Division and State	1963 +	1972
United States, total		
New England		
Connecticut	•	
Maine		
Massachusetts		
Rhode Island	•	
Vermont		
-		
		•
-		
Pacific		
Alaska		
Hawaii		
Oregon	•	
Washington	•	o
മ		
Offices abroad		

Outlying areas.........
Offices abroad......

California....

Hawaii.....

Alaska....

				* •
New England. Connecticut Maine. Massachusetts New Hampshire Rhode Island	United States, total	Division and State		U.S. : Federal obligations for R&D fiscal years 1963, 196
		1963 1972	(Millions of dollars)	Table 19 U.S. : Federal obligations for R&D plant, by geographic division and State, fiscal years 1963, 1965, 1968, 1969, 1970, 1971, and 1972
			⊕ €	

U.S.: Federal R&D expenditures by function, subfunction, and agency program under an alternative classification system, fiscal years 1963-74
[Dollars in millions]

Table 20

Function, subfunction, and agency program	1963	*	1974
Total, all functions			
Health, total			
Development of health resources, total	-		· .
National Institutes of Health	, v	•	
Medical and prosthetic research(VA)			·······
-			
Commerce and industry, total		•	· -
Regional economic development, total			
Economic Development Administration(Commerce)			·
Assistance to industry, total			
Office of Minority Business Enterprise(Commerce)			
Regulation of industry, total			
Federal Trade Commission	·		

Table 21 U.S.: Funds for research and development, by industry, 1956-1973 (Dollars in millions)

2			
and size of company	SIC code		
Total		1956 1973	•
Distribution by industry			
Food and kindred products	20		03-1
vood products, and furnitu	24,25		0900
cals and al	28		500
•	281-82		4000
er chem	283 284 - 89		798
or refining and extraction	29,13		79-0
d glass products	30		RDP
tals and products	331-32 2201 2200		CIA
us metals and products	333-36,3392		3/23 :
	34		0/08
l equ:	35 36,48		e 200
unication equ	365 366-67,48		eleas
o rectrical equipment	361-64,369		or R
TO.	371,373-75,379		∕ed F
and scientific instruments	38	9	prov
asuring instruments hic, and other instruments	381-82 383-87		Ap
nufacturing industries	21,27,31,39 07-12,14-17,41-47.		
	739,8		erte .

U.S.: Table 22 Federal funds for research and development, by industry 1957-1973(Dollars in millions)

eminimperanden in de medicina deprendentation una consepte de medicina de mandente de maria d		
	21,27,31,39 07-12,14-17,41-47, 49-67,739,807,891	Other manufacturing industries
	381-82 383-87	Eientific and mechanical measuring instruments Etical, surgical, photographic, and other instruments
	371,373-75,379 372,19 38	Motor vehicles and other transportation equipment
	365 366-67,48 361-64,369	Adio and TV receiving equipment
	34 35 36,48	Fatricated metal products
	331-32,3391,3399 333-36,3392	Herrous metals and products
	29,13 30 32 33	Petroleum refining and extraction
	281-82 283 284-89	Industrial chemicals
	24,25 26 28	wood products, and furnitud allied productss and allied products
	20 22.23	Food and kindred products
193/ = = = 19/3		
7	SIC code	Industry

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U.S.: Company funds for research and development, by industry 1957-1973 Table 23

(Dollars in millions)

Table 24
U. S.: Funds for research and development, by industry and size of company, 1956-1973a/

11-33

		•		•		
					21,27,31,39 07-12,14-17,41-47 49-67,739,807,891	Other manufacturing industries
					381-82 383-87	Scientific and mechanical measuring instruments
					371,373-75,379 372,19 38	Motor vehicles and other transportation equipment
					365 366-67,48 361-64,369	Radio and TV receiving equipment Communication equipment and electronic components
	-				34 35 36,48	Fabricated metal products
	-				331-32,3391,3399 333-36,3392	Ferrous metals and products
					29,13 30 32 33	Petroleum refining and extraction
					281-82 , 283 , 284-89	Industrial chemicals
					20 22,23 24,25 26 28	Food and kindred products
	1					Total
f 5,000 to 10,000 9,999 or more	int of	Companies with total employment of— 1,000 to 5,000 4,999 9,999	Less than 1,000	Total	SIC code	Industry
	f dollars	Millions of d	M111i		,	

je/

Table 25 Funds for basic research, applied research, and development by selected industry and size of company, 1957-1973a

[Dollars in millions]

Distribution by size of company d (based on number of employees) press than 1,000	ircraft and missiles	tion equipment	Tubber products	12	Industrial chemicals	Shemicals and allied products	0003 Distribution by industry	Total	Industry and size of company
	العنفيماا	366-67,48	33 34 35 36,38	29,13	281-82 283 284-89	22,23 22,23 26 28	•		SIC code
•							•		Total
									Basic
			·	·					Applied research
Approved For	Release	200	0/08/23 · C	A-RD	P79-0079	840005000	90003-		Development

Table 26
U. S.: Funds for basic research, by selected industry and field of science, 1957-1973a/

[Dollars in millions]

	Selectronic components Obher electrical equipment .	Electrical equipment and and and mommunication	Famicated metal products	Parrous metals and products Approducts	Perfoleum refining and Attraction	Endustrial chemicals	Tegriles and apparel	0003-1 Total	Industry
372,19 07-12,14-17,41-47, 49-67,739,807,891	366-67,48 361-64,369	35,48	34	331-32,3391,3399 333-36,3392	29,13 30 33	281-82 283 284-89	20 22,23 26 28		SIC code
									Total
						٠			Physical sciences
							,		Mathe- matics
3						·			Environ- mental sciences
								•	Engineering (including metallurgy)
	æ							·	Life
Ą	pprove	d For Re	lease	2000/08	1/23 : CIA-RI	P79-0079	3A00050009	0003-1	Other sciences

		and the same of th	ادر محمد و الدوار المراجعية والمستقدية أواور	معاملة بالتيامة مدين التي يعالي التي التي التي التي التي التي التي ا	
Aircraft and partsProfessional and scientific instrumentsOther product fields, not elsewhere classified	Electrical equipment, except communication Electric transmission and distribution equipment Electrical industrial apparatus Other electrical equipment and supplies Communication equipment and electronic components Motor vehicles and other transportation equipment Other transportation equipment	Machinery Engines and turbines Farm machinery and equipment Construction, mining, and materials handling machinery Metalworking machinery and equipment Office, computing, and accounting machines Other machinery, except electrical	Drugs and medicines Petroleum refining and extraction Rubber and miscellaneous plastics products Stone, clay, and glass products Primary metals Ferrous metals and products	Atomic energy devices	Product field Total
372,19 38	36,except365-67 361 362 363-64,369 365-67 37,except372 371 373-75,379	34 35 351 352 353 354 357 balance of 35	283 29,13 30 32 32 331–32,3391,3399 331–32,3391,3399	19,except192 192 20 22 28,except283 281 282 287 284-89	SIC code
•					
131		9			1959 1973

Total	Industry		
	SIC code		
	Coverage ratio		
<i>i</i>	R&D costs		
	Scientists and Suj	Millions of dollars	
	Supporting personnel	dollars	
	Wages Scientists Scientists And Supporting and R&D ratio costs engineers personnel supplies costs		
	Other R&D costs		

	ı [:]				, V .	}		• • •	:	•	•		1	
a/	WOLLMARIULACTURING INQUSTRIES	Other manufacturing industries	Scientific and mechanical measuring instruments Optical, surgical, photographic, and other instruments	Motor vehicles and other transportation equipment Aircraft and missiles	Radio and TV receiving equipment	Fabricated metal products Machinery Electrical equipment and communication	Ferrous metals and products	Stone, clay, and glass products Primary metals	Petroleum refining and extraction	Industrial chemicals Drugs and medicines Other chemicals	Textiles and apparel	Total	Industry	
	07-12,14-17,41-47 49-67,739,807,891	21,27,31,39	381-82 383-87	371,373-75,379 372,19 38	365 366-67,48 361-64,369	34 35 36,48	331-32,3391,3399 333-36,3392	32 33	29,13	281-82 283 284-89	22,23 22,23 24,25 26		SIC code	
	 ,					*			•				Coverage ratio	
	•											•	R&D costs	
					·								Wages Scientists and Sneers Sneers	(11ions
						,						·	Supporting personnel	of dollars
		•	•						•				Materials and supplies	
	aya sayara, aftat ma				Territory to the agent to							•	Other R&D costs	

These data are available for each year, 1962 through 1973.

affi, #sferfickiters are

Table 29

Geographic distribution of funds for industrial research and development, 1962-1973

Hawaii	California	Oregon	Washington	Pacific							•	 .	Connecticut	Rhode Island	Massachusetts	Vermont	New Hampshire	Maine	New England	NORTHEAST		UNITED STATES, TOTAL	Area	
•.			•	•	•											•					•			
	•	٠		•					,				•			•						-		
	•			,													,		•			•	1962	
					•			•		•								÷					1	
•						5	3		•					-									- 1973	
	•												• .										· •	

Table 30

Current expenditures for research and development in universities and colleges,

1973	1953	Year	
	,	Total R&D performance	
		Federal Government	by s
		Source of State and local governments	by source of funds, 1953-1973 [Dollars in millions]
		f funds Industry	.953-1973 .ons]
		Other nonprofit institutions	
•	,.	Universities' and colleges' own funds	

Table 31

Current expenditures for research and development in universities and colleges, by State, 1964-1973

												•	•	•						 !	, ,
	Alaska	California	Washington	racific	Do Andr	• •	•		•	•	• •		•	•	• •	Vermont	New Hampshire	Maine	New England	United States, total:.	State
	-						·								•	•	•	•		-	1964
																			•		1965
							-					;			•			-	*		1966
		•		•														,			1967
			•			,												-,			1968
3												•									1969
													-								1970
																					1971
																•					1972
	-			9											•						1973
						•		,								••	•	•			

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s.: Federal expenditures for research and development in universities and colleges, by State, 1964-1973 Table 32

State	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	•
United States, total				·					·		
New England									,		
Maine	.:				•						
Vermont			•						•		,
• •											
•	•	<u> </u>									
•											
•										-	
•								•			
								,			
• •	-										
• •							······································				
Pacific			÷	•		-				0	
Washington						•					
Oregon											
Alaska										<u>-</u>	
Hawaii					•	•	3			·	

II-42

Current expenditures for R&D in universities and colleges, by field of science, and source of funds, 1964-1973

[Dollars in thousands]

		•																										•	
	Other sources	Federal Government	Other sciences, n.e.c	Other sources	Federal Government	Social sciences	Other sources	Federal Government	Psychology	Other sources	Federal Government	Life sciences	Other sources	Federal Government	Mathematics	Other sources	Federal Government	Environmental sciences	Other sources	Federal Government	Physical sciences	Other sources	Federal Government	Engineering	Other sources	Federal Government		Field of science and source of funds	
		• .	•		•					:									-									1964	
														٠.	-									•				1965	
						•														-						•	`	1966	
				•	•					-																		1967	
																												1968	
	<u> </u>									-			-		3				•				_					1969	
									-							•	•		-									1970	
											-		·									- ·						1971	
											·													•	,			1972	
· .		•		-				•										-				•						1973	

Table 34
U. S.: Percent distribution of selected financial, employment, and educational characteristics of scientific and engineers activities of universities and colleges, by institutional group ranked on the basis of R&D expenditures, 1968-1973a/

APPLATE ON STREET OF STREET

	· · · · · · · · · · · · · · · · · · ·				
vernment sources instruction Total Government	sources instruction Total	instruction Total	sources instruction Total	Government sources instruction Total	sources instruction Total

4a/ These data are available for each year, 1968 through 1973.

Table 35

Capital expenditures for research, development, and instruction in the sciences and engineering in universities and colleges, by type of institution, and source of funds, 1964-1973a

[Dollars in thousands]

Type of instituti		1	Total capital expenditures Federal Government
Type of institution	ion Total		Government
Total			
Doctorate	•		
Master's	•		
Bachelor's	•		
No science degree	•		

independent nonprofit institutions, by source of funds, 1953-1973 Current expenditures for intramural R&D performance of Table 36

[Dollars in millions]

•	Total	Federal Government	Industry	Other sources
1953				
••	•	-		
• • •	. •	:	-	
• • • •		· · · · · · · · · · · · · · · · · · ·		3
• • •				
1973	-		•	
		c		

Table 37
Current expenditures for R&D performance of independent nonprofit institutions, by source of funds and R&D expenditure-size class, 1964-1973

[Dollars in thousands]

	3				
es.	·	. R	R&D expenditure-size class	-size class	
Source of funds	Total	Less than \$500	\$500 to \$999	\$1,000 to \$4,999	\$5,000 or more
Total					
Federal Government					
State governments					
Foundations					•
Industry					
Other sources					
				;	

U. S.: Current expenditures for R&D performance of independent nonprofit institutions, the field of science	ldependent e	Troaduou	c Institut	, fs110T
. [Dollars in thousands]	is]			٠
Field of science	1964	1966	1969	1973
Total				
			·	
Engineering				
Mathematics				
Psychology				
Social sciences			,	
Other eciences, n.e.c.				

Table 38

Approved For Relea 000/08/23 : CIA-RDP79-00798A000500090003-1/6 m 2 - 1 m 6



CENTER FOR POLICY ALTERNATIVES

MIT Building 39-547

CABLE ADDRESS: MIT CAM TWO NUMBER: (710) 320-0058 CAMBRIDGE, MASSACHUSETTS 02139 (617) 253-1661

April 9, 1974

Dr. E. E. Grishayev Head, Department of Finance and Capital Investment State Committee of the Council of Ministers Moscow, U.S.S.R.

Dear Dr. Grishayev:

The United States members of the working subgroup on financial research and development statistics have been deeply involved over the past several weeks in identifying data on Soviet research and development expenditures which United States analysts feel will be needed for comparative studies on United States and U.S.S.R. levels of effort in research and development. Similarly, financial data on United States research and development for use by Soviet analysts have been selected for your consideration and relevant information on United States definitions concepts and survey methodologies is being prepared.

 ${\bf i}$ expect the work on this phase of the study program to be completed in the very near future so that the material can (AN OSIDE sent to you by the end of April. I am looking forward to receiving comparable material prepared by you and your associates.

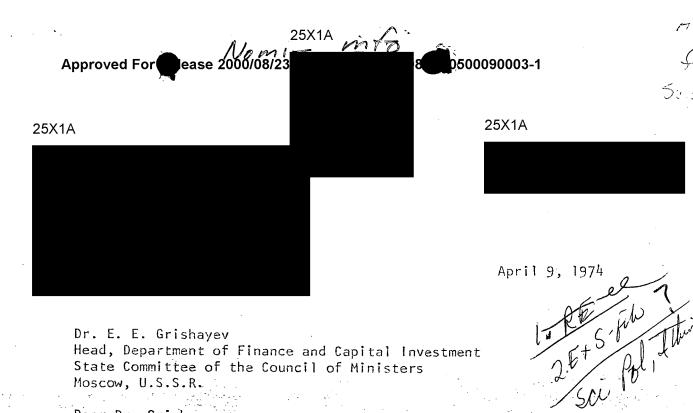
I am sorry you were unable to attend the November meeting held in Washington, D.C. It was a pleasure, however, meeting and working with Dr. Maslennikov. Please give him my warmest regards.

Sincerely,

Center for Policy Alternatives

WS: JDV

Science police



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25X incerely,

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